

Collaborative Research in Chemistry (CRC) incorporating CRAEMS (NSF 00-68)

Program Solicitation

NSF-01-165

DIRECTORATE FOR MATHEMATICAL AND PHYSICAL SCIENCES
DIVISION OF CHEMISTRY

LETTER OF INTENT DUE DATE(S) (*optional*): November 16, 2001

FULL PROPOSAL DEADLINE(S): December 17, 2001



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SUMMARY OF PROGRAM REQUIREMENTS

GENERAL INFORMATION

Program Title: Collaborative Research in Chemistry (CRC)

Synopsis of Program: The purpose of the CRC program is to enable groups of researchers to respond to recognized scientific needs, to take advantage of current scientific opportunities, or to prepare the groundwork for anticipated significant scientific developments in chemistry, broadly defined. Collaborations should involve three or more investigators with complementary expertise, each of whom is an independent researcher with an established research group. The research focus should be interdisciplinary; thus, collaborators may include, in addition to chemists, researchers from other science and engineering disciplines appropriate to the proposed research. Collaborations involving investigators with backgrounds in diverse areas of chemistry are also appropriate. This program will support projects for which the collective effort of several research groups is necessary to reach stated scientific goals. Projects should be scientifically focused, limited in duration, and substantial in their scope and impact.

Starting in Fiscal Year 2002, the Collaborative Research Activities for Environmental and Molecular Science Program (CRAEMS, NSF 00-68) has been incorporated into the Collaborative Research in Chemistry Program.

Cognizant Program Officer(s):

- Dr. Katharine Covert, Inorganic, Bioinorganic and Organometallic Chemistry, Mathematical and Physical Sciences, Chemistry, 1055, telephone: 703-292-4950, e-mail: kcovert@nsf.gov.
- Dr. Joseph Akkara, Materials Chemistry, Mathematical and Physical Sciences, Chemistry, 1055, telephone: 703-292-4946, e-mail: jakkara@nsf.gov.
- Dr. Les Butler, Analytical and Surface Chemistry, Mathematical and Physical Sciences, Chemistry, 1055, telephone: 703-292-4955, e-mail: lbutler@nsf.gov.
- Dr. Celeste Rohlfin, Physical Chemistry, Mathematical and Physical Sciences, Chemistry, 1055, telephone: 703-292-4962, e-mail: crohlfin@nsf.gov.
- Dr. George Rubottom, Organic and Macromolecular Chemistry, Mathematical and Physical Sciences, Chemistry, 1055, telephone: 703-292-4965, e-mail: grubotto@nsf.gov.

Applicable Catalog of Federal Domestic Assistance (CFDA) Number(s):

- 47.049 --- Mathematical and Physical Sciences

ELIGIBILITY INFORMATION

- **Organization Limit:** Only U.S. academic institutions and non-profit research institutions may submit proposals.
- **PI Eligibility Limit:** Unaffiliated scientists are not eligible to submit a proposal, but may be eligible for support.
- **Limit on Number of Proposals:** An investigator may participate (as a PI, co-PI or senior research associate) in only one CRC proposal.

AWARD INFORMATION

- **Anticipated Type of Award:** Standard or Continuing Grant
- **Estimated Number of Awards:** Up to six.
- **Anticipated Funding Amount:** Approximately \$3.0 million in FY 2002, depending on availability of funds.

PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

- **Letters of Intent:** Submission of Letters of Intent is optional. Please see the full program announcement/solicitation for further information.
- **Full Proposals:** Deviations From Standard Preparation Guidelines
 - The program announcement/solicitation contains deviations from the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full program announcement/solicitation for further information.

B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is Specialized. Please see the full program solicitation for further information.
- **Indirect Cost (F&A) Limitations:** Not Applicable.
- **Other Budgetary Limitations:** Not Applicable.

C. Deadline/Target Dates

- **Letters of Intent (*optional*):** November 16, 2001
- **Preliminary Proposals (*optional*):** None
- **Full Proposal Deadline Date(s):** December 17, 2001

D. FastLane Requirements

- **FastLane Submission:** Required
- **FastLane Contact(s):**
 - Paul Spyropoulos, Computer Specialist, Mathematical and Physical Sciences, Chemistry, 1055, telephone: 703-292-4968, e-mail: cheffl@nsf.gov.

PROPOSAL REVIEW INFORMATION

- **Merit Review Criteria:** National Science Board approved criteria. Additional merit review considerations apply. Please see the full program announcement/solicitation for further information.

AWARD ADMINISTRATION INFORMATION

- **Award Conditions:** Standard NSF award conditions apply.
- **Reporting Requirements:** Standard NSF reporting requirements apply.

I. INTRODUCTION

The Division of Chemistry (CHE) of the National Science Foundation (NSF) expects to make a small number of awards in Fiscal Year 2002 to support activities of collaborative research groups. Proposals for Collaborative Research in Chemistry (CRC) should provide a plan designed to have significant impact in scientifically focused areas of recognized or emerging importance to chemistry.

The Division employs the individual investigator award as the principal mechanism for supporting fundamental research in the chemical sciences. On the other hand, the chemical sciences thrive on the sharing of ideas among researchers from various fields and disciplines. Indeed, there are research needs that can only be met by teams of investigators drawn from diverse research areas. The advantages of pooled insights, complementary expertise, diverse points of view, and shared tasks make a successful research collaboration more than the sum of its parts. The Division supports multi-investigator projects to foster research collaboration, promote exploration of multidisciplinary projects, and encourage exploitation of unique opportunities for progress on significant problems. The CRC program provides a specific focus and specific mode of support for collaborative research.

II. PROGRAM DESCRIPTION

The purpose of the CRC program is to enable interdisciplinary groups of researchers to respond to recognized scientific needs, to take advantage of current scientific opportunities, or to prepare the groundwork for anticipated significant scientific developments in chemistry, broadly defined. Collaborations should involve three or more independent investigators with complementary expertise. The members of the collaboration can come from more than one institution and can include non-academics and international scientists. The principal investigator will most likely be a chemist; however, there is no restriction on the scope of disciplines represented by the collaborators. Investigators may include, in addition to chemists, researchers from other science and engineering disciplines appropriate to the proposed research.

Chemistry is the focus of this program. Therefore ancillary benefit to other fields of science, although desirable, is not sufficient of itself to make a project suitable for this program. Awards made under this program are intended to foster synergy between collaborators that cannot be achieved with individual grants. Therefore, this program will support projects requiring the collective effort and close collaboration of several research groups to reach stated scientific goals. Projects should be scientifically focused, limited in duration, and substantial in their scope and impact.

Beginning in Fiscal Year 2002, the Collaborative Research Activities in Environmental and Molecular Science Program (CRAEMS, NSF 00-68) has been integrated into the CRC Program. Therefore, some areas formerly supported by CRAEMS (benign chemical synthesis, metalloenzymes and metal chelators, interfacial science, corrosion and separations, catalysis and biocatalysis, alternative solvents, waste treatment, and supporting capabilities and technologies) may now be appropriate for the CRC competition.

Proposals in topical areas covered by the Fiscal Year 2002 NSF competitions in Information Technology Research, Nanoscale Science and Engineering or Biocomplexity in the Environment will not be considered in the CRC program. NSF reserves the right to reject or re-assign proposals that are more appropriate to other NSF programs. Principal Investigators should contact a Cognizant Program Officer if there are any questions about the suitability of a proposal for the CRC Program.

An application for support through the CRC program might be prompted by:

- Accumulated scientific results pointing to the possibility of a major breakthrough on an important chemical problem.
- A major recent breakthrough creating new possibilities for significant progress on an important chemical problem.
- An existing focused research agenda important to chemistry requiring close cooperation of several research groups to be advanced or otherwise significantly accelerated.
- Significant opportunities for mutually productive exchange between areas within the chemical sciences or between chemical and other scientific areas that have only recently become apparent.

Examples of possible outcomes are:

- Substantial progress is made toward answering a set of major open chemical questions.
- New research directions in chemistry that have become possible due to recent advances are identified, and significant progress is achieved.
- As a direct result of the collaborative effort, an important chemical research agenda is significantly advanced.
- Significant new opportunities for productive mutual exchange between different areas in the chemical sciences are identified and progress is made towards exploiting these opportunities.
- Significant new opportunities for the application of the chemical sciences to other areas of science and engineering are identified, and exemplary progress in the field of chemistry results.

Additional possible outcomes include the following:

- Undergraduates, graduate students and postdoctoral researchers are trained in an important emerging area.
- Graduate students, postdoctoral researchers, and undergraduates are trained in new ways. This could include, but is not limited to, interdisciplinary training or training in team-based research.
- New and exemplary modes of collaborations are established.

Research collaborations are expected to remain open to the broader scientific community from which they are drawn, and to disseminate the results of their work in a timely and effective fashion.

The sections above list just a few examples of projects and outcomes. Initiators of proposals are strongly urged to discuss ideas for a project with one of the program officers listed at the end of this document. Principal Investigators should ensure the proposed CRC project does not overlap significantly with ongoing federally funded research.

The CRC Program encourages collaborations with non-academic or international scientists. These cooperative research projects should be jointly designed and implemented by the research partners to achieve overall balance and mutual benefit. Some brief guidelines are given below. Because of special requirements, investigators considering a CRC proposal with an industrial, government or international partner are strongly encouraged to contact a cognizant program officer early in the planning process.

Such proposals require an institutional letter of collaboration from the industrial, governmental or international partner that confirms the participation of a co-investigator. This letter should be included in the Supplemental Documentation (see Proposal Preparation Instructions). The letter should describe the plan of interaction with the U.S. academic institution, the time commitment of the researcher(s), the nature of the cooperative research activities and any commitment to cost-sharing. Letters of support or recommendation are inappropriate and may cause a proposal to be returned without review.

Collaborating scientists associated with entities such as industry, national laboratories, state agencies, and Federally Funded Research and Development Centers (FFRDC) must be supported by their own institution. However, it is appropriate for students supported through universities to work at a partner industrial laboratory, FFRDC or comparable site or for universities to fund research expenses incurred when scientists from such entities work at university sites. Federal employees may not receive salaries or in other ways augment their agency's appropriation through grants made by this program, and no funds for major equipment at FFRDCs are allowed.

Support for collaborations with international scientists is provided through the NSF grant to the submitting U.S. institution. This means no CRC award funds may go directly to foreign institutions. The proposal may include up to \$100,000 in participant support costs, over the duration of the grant, for international collaborative research activities. Travel and incidental research costs may be included; salaries may not. These international interactions must feature a joint scientific workplan and should be clearly described in the Project Description. If, after review, a proposal is recommended for funding, the CRC Program Officer will work with Program Officers from NSF's International Programs and the key project personnel to develop a detailed plan consistent with applicable international arrangements.

III. ELIGIBILITY INFORMATION

Only U. S. academic institutions and non-profit research institutions may submit proposals.

Unaffiliated scientists are not eligible to submit a proposal, but may be eligible for support.

An investigator may participate (as PI, co-PI, senior research associate) in only one CRC proposal.

IV. AWARD INFORMATION

Under this solicitation, proposals may be submitted for support for up to five years. Although it is anticipated that award size will average \$500K per year, there is no pre-determined maximum or minimum award size. NSF expects to fund up to six awards during FY2002, depending on the quality of submissions and the availability of funds. The anticipated date of awards is July 2002.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Letters of Intent: To expedite the review process for CRC proposals, a one-page e-mail letter of intent to submit a proposal should be sent by the PI to che-crc@nsf.gov by 5:00 PM, local time, on November 16, 2001. This letter of intent should contain the following information:

- the title of the project,
- a brief project description,
- the names and affiliations of the principal investigators and other senior personnel, and
- the name of the submitting institution.

Although the letter of intent is optional, it will greatly expedite the review process.

Full Proposal:

Proposals submitted in response to this program announcement/solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF *Grant Proposal Guide* (GPG). The complete text of the GPG is available electronically on the NSF Web Site at: <http://www.nsf.gov/cgi-bin/getpub?gpg>. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (301) 947-2722 or by e-mail from pubs@nsf.gov.

While more than one institution may participate in a single proposal, one institution must accept overall management responsibility. If more than one institution is involved in the collaborative effort, a single proposal must be submitted with subawards administered by the lead organization (see GPG guidelines, chapter II.C.11.b). Proposals must contain the following elements in the order indicated. The general requirements given in the GPG apply, unless specified differently below.

(a) Cover sheet - NSF Form 1207. Proposers should identify the program solicitation number in the program announcement/solicitation block on the proposal Cover Sheet (NSF Form 1207). Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

(b) Project Summary, up to 250 words.

(c) Table of Contents - NSF Form 1359. This form will be generated automatically by FastLane.

(d) Project Description. A total of twenty pages, including Results from Prior Support, Modes of Collaboration and Training, and Management Plan. CRC proposals are likely to be read by non-specialists at some stage of the review process. It is therefore particularly important that they be written to emphasize the impact of the projects on chemistry in a broad context.

i) Proposed Research. Narrative, not to exceed eighteen pages, consisting of the following items:

- An explanation of the scientific context and timeliness of the proposed project.
- A description of the proposed research.
- A justification for why a collaborative effort involving more than one investigator is necessary to carry out the proposed project.
- A description of the contribution to be made by each senior investigator.
- A timeline for the planned work and a justification for the duration.
- Plans for disseminating the results.
- Results from prior NSF support. If a PI or co-PI has had more than one NSF award active in the past five years, provide results from the most relevant award. Results from prior NSF support are limited to two pages.

ii) Modes of Collaboration and Training. Narrative, not to exceed one page. The following are examples only:

- A description of the mode of collaboration.
- A description of the mode of training graduate students, postdoctoral researchers, or undergraduates.
- A description of any planned workshops with a tentative list of participants.

iii) Management Plan. This section may not exceed one page.

Provide a management plan, describing how the group effort will be coordinated and how decisions will be made regarding the conduct of the project.

(e) References Cited. References should include full titles of articles and book chapters cited. This section includes bibliographic citations only and must not be used to provide parenthetical information outside of the Project Description.

(f) Biographical sketches. For all key personnel, please provide a brief biographical sketch using the format described in the Grant Proposal Guide. Do not exceed two pages per person for the sketch. Up to five publications most closely related to the proposal and up to five other significant publications may be included, including those accepted for publication. Note that recent collaborators should also be collected into the combined list given in the Supplemental Documentation (see below).

(g) Budget. Include annual budgets for each year; a cumulative budget will be automatically generated by the FastLane system. The proposal must also include subaward budgets (if subawards will be used). A detailed budget justification (up to three pages) should document proposed expenses.

(h) Current and Pending Support. A full description of the total level of current and pending support from all sources for the key personnel.

(i) Facilities. A description of the facilities (including laboratories and computational facilities) that will be made available to the project.

(j) Supplementary Documentation. Provide a combined, alphabetized list of all scientists, with current affiliations, who have collaborated with the PI or co-PIs in the last 48 months. Required letters of collaboration from national laboratories, international institutions, and industry should be included in this section. Letters of collaboration from investigators not supported on the grant are also appropriate. Letters of recommendation or support are not permitted.

(k) Suggested Reviewers/Reviewers Not to Include (Optional). NSF invites the proposer to suggest, at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority-serving institutions, or adjacent disciplines to that principally addressed in the proposal.

Proposers are reminded to consult the Grant Proposal Guide for more detailed information on preparing proposals. Proposals not adhering to the proposal preparation guidelines in the Grant Proposal Guide, as amended in this program announcement, may be returned without review.

Proposers are reminded to identify the program solicitation number (NSF-01-165) in the program announcement/solicitation block on the proposal Cover Sheet (NSF Form 1207). Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

B. Budgetary Information

The CRC Program requires institutional cost sharing for the equipment portion of the award budget (including equipment in subawards). The program requires no matching funds for the first \$80,000; however, cost-sharing of 50% of equipment costs over \$80,000 is required. Matching funds must be in cash, not in-kind, and be used towards the purchase of the requested instrument(s).

The proposed cost sharing must be shown on Line M on the proposal budget. Documentation of the availability of cost sharing must be included in the proposal. Only items which would be allowable under the applicable cost principles, if charged to the project, may be included as the awardee's contribution to cost sharing. Contributions may be made from any non-Federal source, including non-Federal grants or contracts, and may be cash or in-kind (see OMB Circular A-110, Section 23). It should be noted that contributions counted as cost-sharing toward projects of another Federal agency may not be counted towards meeting the specific cost-sharing requirements of the NSF award. All cost-sharing amounts are subject to audit. Failure to provide the level of cost-sharing reflected in the approved award budget may result in termination of the NSF award, disallowance of award costs and/or refund of award funds to NSF.

C. Deadline/Target Dates

Proposals must be submitted by the following date(s):

Letters of Intent (*optional*): November 16, 2001

Full Proposals by 5:00 PM local time: December 17, 2001

D. FastLane Requirements

Proposers are required to prepare and submit all proposals for this Program Solicitation through the FastLane system. Detailed instructions for proposal preparation and submission via FastLane are available at: <http://www.fastlane.nsf.gov/a1/newstan.htm>. For FastLane user support, call 1-800-673-6188 or e-mail fastlane@nsf.gov.

Submission of Signed Cover Sheets. The Authorized Organizational Representative (AOR) must electronically sign the proposal Cover Sheet to submit the required proposal certifications (see [Chapter II, Section C](#) of the Grant Proposal Guide for a listing of the certifications). The AOR must provide the required certifications within five working days following the electronic submission of the proposal. Further instructions regarding this process are available on the FastLane website at: <http://www.fastlane.nsf.gov>.

VI. PROPOSAL REVIEW INFORMATION

A. NSF Proposal Review Process

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by Program Officers charged with the oversight of the review process. NSF invites the proposer to suggest at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority-serving institutions, or adjacent disciplines to that principally addressed in the proposal.

Proposals will be reviewed against the following general review criteria established by the National Science Board. Following each criterion are potential considerations that the reviewer may employ in the evaluation. These are suggestions and not all will apply to any given proposal. Each reviewer will be asked to address only those that are relevant to the proposal and for which he/she is qualified to make judgements.

- **What is the intellectual merit of the proposed activity?**
How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of the prior work.) To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

- **What are the broader impacts of the proposed activity?**

How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

Principal Investigators should address the following elements in their proposal to provide reviewers with the information necessary to respond fully to both of the above-described NSF merit review criteria. NSF staff will give these elements careful consideration in making funding decisions.

- ***Integration of Research and Education***

One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learning perspectives.

- ***Integrating Diversity into NSF Programs, Projects, and Activities***

Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

- **Additional Review Criteria**

In addition to the National Science Board merit review criteria, reviewers will be asked to apply several specific criteria when reviewing CRC proposals. These criteria include:

- Long-term scientific impact of the proposed activity. Projects that have a high degree of risk will receive favorable consideration providing that the potential benefit is correspondingly high.
- Justification of the value of the collaborative effort.
- Extent to which the group effort is focused on a cohesive well-delineated goal.
- Timeliness of the planned work. Projects in emerging research areas are especially encouraged.
- Effectiveness and adequacy of the educational plan.
- Likelihood of substantial progress.
- Appropriateness of the group members and group structure for the task.
- Adequacy and appropriateness of the proposed timeline.
- Adequacy and appropriateness of the budget.

A summary rating and accompanying narrative will be completed by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers, are sent to the Principal Investigator/Project Director by the Program Director. In addition, the proposer will receive an explanation of the decision to award or decline funding. In addition, any proposal requesting \$750,000 or more per year may be subject to a site visit as part of the review process.

A summary rating and accompanying narrative will be completed and signed by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers, are sent to the Principal Investigator/Project Director by the Program Director. In addition, the proposer will receive an explanation of the decision to award or decline funding.

B. Review Protocol and Associated Customer Service Standard

All proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field represented by the proposal. Proposals submitted in response to this announcement/solicitation will be reviewed by Mail Review followed by Panel Review.

Reviewers will be asked to formulate a recommendation to either support or decline each proposal. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

NSF is striving to be able to tell applicants whether their proposals have been declined or recommended for funding within six months for 70 percent of proposals. The time interval begins on the date of receipt. The interval ends when the Division Director accepts the Program Officer's recommendation.

In all cases, after programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications and the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at its own risk.

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program Division administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See section VI.A. for additional information on the review process.)

B. Award Conditions

An NSF award consists of: (1) the award letter, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable award conditions, such as Grant General Conditions (NSF-GC-1)* or Federal Demonstration Partnership (FDP) Terms and Conditions * and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreement awards also are administered in accordance with NSF Cooperative Agreement Terms and Conditions (CA-1). Electronic mail notification is the preferred way to transmit NSF awards to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

*These documents may be accessed electronically on NSF's Web site at http://www.nsf.gov/home/grants/grants_gac.htm. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (301) 947-2722 or by e-mail from pubs@nsf.gov.

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, available electronically on the NSF Web site at <http://www.nsf.gov/cgi-bin/getpub?gpm>. The GPM is also for sale through the Superintendent of Documents, Government Printing Office (GPO), Washington, DC 20402. The telephone number at GPO for subscription information is (202) 512-1800. The GPM may be ordered through the GPO Web site at <http://www.gpo.gov>.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

Within 90 days after the expiration of an award, the PI also is required to submit a final project report. Approximately 30 days before expiration, NSF will send a notice to remind the PI of the requirement to file the final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for that PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

NSF has implemented an electronic project reporting system, available through FastLane. This system permits electronic submission and updating of project reports, including information on project participants (individual and organizational), activities and findings, publications, and other specific products and contributions. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system.

VIII. CONTACTS FOR ADDITIONAL INFORMATION

General inquiries regarding Collaborative Research in Chemistry should be made to:

- Dr. Katharine Covert, Inorganic, Bioinorganic and Organometallic Chemistry, Mathematical and Physical Sciences, Chemistry, 1055, telephone: 703-292-4950, e-mail: kcovert@nsf.gov.
- Dr. Joseph Akkara, Materials Chemistry, Mathematical and Physical Sciences, Chemistry, 1055, telephone: 703-292-4946, e-mail: jakkara@nsf.gov.
- Dr. Les Butler, Analytical and Surface Chemistry, Mathematical and Physical Sciences, Chemistry, 1055, telephone: 703-292-4955, e-mail: lbutler@nsf.gov.
- Dr. Celeste Rohlfin, Physical Chemistry, Mathematical and Physical Sciences, Chemistry, 1055, telephone: 703-292-4962, e-mail: crohlfin@nsf.gov.
- Dr. George Rubottom, Organic and Macromolecular Chemistry, Mathematical and Physical Sciences, Chemistry, 1055, telephone: 703-292-4965, e-mail: grubotto@nsf.gov.

For questions related to the use of FastLane, contact:

- Paul Spyropoulos, Computer Specialist, Mathematical and Physical Sciences, Chemistry, 1055, telephone: 703-292-4968, e-mail: cheffl@nsf.gov.

IX. OTHER PROGRAMS OF INTEREST

The NSF *Guide to Programs* is a compilation of funding for research and education in science, mathematics, and engineering. The NSF *Guide to Programs* is available electronically at <http://www.nsf.gov/cgi-bin/getpub?gp>. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter.

Many NSF programs offer announcements or solicitations concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices. Any changes in NSF's fiscal year programs occurring after press time for the *Guide to Programs* will be announced in the NSF [E-Bulletin](#), which is updated daily on the NSF web site at <http://www.nsf.gov/home/ebulletin>, and in individual program announcements/solicitations. Subscribers can also sign up for NSF's [Custom News Service](#) (<http://www.nsf.gov/home/cns/start.htm>) to be notified of new funding opportunities that become available.

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Awardees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities and persons with disabilities to compete fully in its programs. In accordance with Federal statutes, regulations and NSF policies, no person on grounds of race, color, age, sex, national origin or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF (unless otherwise specified in the eligibility requirements for a particular program).

Facilitation Awards for Scientists and Engineers with Disabilities (FASSED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the program announcement/solicitation for further information.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090, FIRS at 1-800-877-8339.

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PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

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